

1739

AMENDMENTS TO THE CLAIMS

The listing below of the claims will replace all prior versions and listings of claims in the present application:

Listing of Claims:

Claim 1 (currently amended): An electrical resistance element comprising: a glow zone and two power supply terminals, wherein the glow zone of the element is tubular; a union extending from each of respective power supply terminals to respective ends of the glow zone, wherein each union is tubular throughout its length and has substantially the same outer diameter as the glow zone, and wherein each union has an end facing towards the glow zone; a transition region adjacent an end of each union and glow zone end, the transition region having a progressively decreasing wall thickness in a direction from the union towards the glow zone, wherein the glow zone has substantially the same inner diameter as the largest inner diameter of the transition region, and wherein the successively decreasing wall thickness is defined by a transition region inner surface having a radius that follows the function
$$r = \frac{r_o}{\sqrt{l_o}} \sqrt{l}$$
 , where l is a position along the longitudinal axis of the union, r is the inner radius of the transition region at position l , l_o is the overall length of the transition region along which the wall thickness decreases, and r_o is the largest inner radius of the transition region.

Claim 2 (canceled)

1739

Claim 3 (previously presented): A resistance element according to Claim 1, wherein the largest inner radius of the transition region is 3 - 5 times larger than its smallest inner radius.

Claim 4 (currently amended): A resistance element according to claim 1, wherein for an the element with a glow zone that has an outer diameter of about 12 mm, its inner diameter is about 10 mm, while the union has an outer diameter of about 12 mm and a smallest inner diameter of about 3 mm, and the progressively decreasing wall thickness of the transition region extends through a distance of about 16 mm.

Claim 5 (currently amended): A resistance element according to claim 1, wherein a ~~respective~~ union is welded to a ~~respective~~ each end of the glow zone.

Claim 6 (currently amended): A resistance element according to claim 1, wherein a ~~respective~~ union and a ~~respective~~ power supply terminal together form a one-piece structure.

Claim 7 (new): A resistance element according to claim 1, wherein each union has longitudinally outwardly of the transition region an inner radius that is smaller than the largest inner radius of the transition region and that corresponds with a transition region minimum inner radius.

1739

Claim 8 (new): A resistance element according to claim 1, wherein the power supply terminals are tubular.